909 Grace St.
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(847) 931-2455

Model 400ML Audible Information Device

Congratulations you have just purchased an A.D.A. Audible Motion Detected Pedestrian Information Devise for the visually impaired. Empco-Lite model 400ML 2C or 400ML-4C conform to the 2009 MUTCD Part VI requirements (Manual on Uniform Traffic Control Devices).

Start Up Instructions.

1) For Model 400ML 2C, open the battery case. This is the case with the short wire attached. Install two (2) spring type 6-volt batteries according to ± engraving in bottom of case.

2) Assemble top to bottom making sure case snaps in and bottom aligns with case top.

3) Mount battery case at bottom of the vertical holding device using bolt & cup washer supplied. Battery case may be mounted inside a plastic drum. (Hole for cord must be drilled to allow cord to be installed inside.)

4) Open and program the Model 400ML according to **Operating Instructions** (See attached). Mount audible device with the motion detector aimed at on-coming pedestrians using the bolt & cup washer supplied.

5) Push switch to on position with the switch pin supplied. Switch is located at the bottom of the motion detector.

6) Each unit has three (3) shields with two (2) screws to install over the motion detector to limit the activation area. Use the enclosed diagram to help choose the shield for your application.

7) Insert allen wrench (supplied) in volume hole in bottom. Turn to volume required. It is suggested volume be set before installing device.

7) **Low Battery Indicator**: **When the batteries are low, the light will continue flashing, but the voice message will not play. A clicking sound will emit from the light indicating batteries must be replaced. Replace the batteries and the recorded message will resume.**

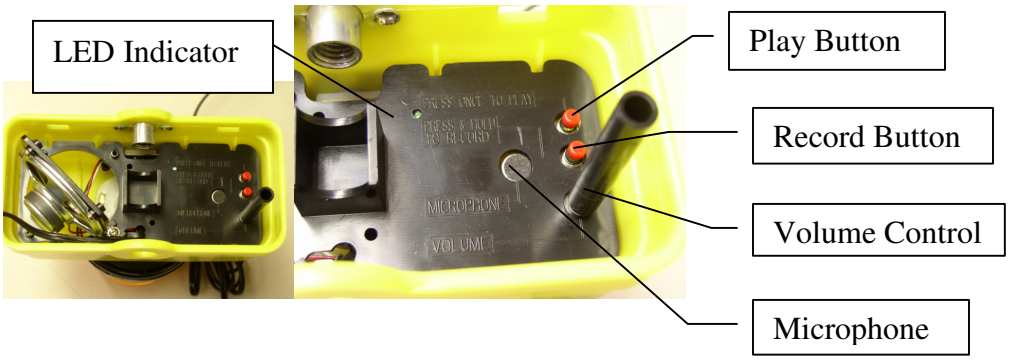
Operating Instructions
ADA Audible Information Device
Model 400ML

1. Remove bottom from top case. A flat head screwdriver might be necessary to release snap locks.

2. Plug unit into battery pack. Be sure internal switch is in the on position. Using switch pin provided, insert the switch pin into the hole below the motion sensor and press the switch.

3. Turn volume button down approximately half way.

4. Depress and "Hold to Record" button until green LED indicator light flashes and goes to steady burn. Speak directly into microphone and record necessary message (up to 60 seconds). Release the button to end recording. Record in quiet room for best results. See attached **Messages for Audible Information Devices** for some sample messages.



5. Depress "To Play" button to hear your message. Message will be activated by the motion control device mounted on the outside of the case on the nut side. The Motion Sensor must face approaching pedestrians to automatically play the recorded message. On initial power up, wait 45 seconds for the sensor to become active. . After the initial warm-up the motion device will activate immediately when tripped.

Messages for Audible Information Devices

Ullman, Brewer, Fitzpatrick, and Ullman (2008) completed research in Texas on pedestrians and temporary traffic control areas, sometimes called construction areas or work zones. The full report can be found at http://tti.tamu.edu/documents/0-5237-1.pdf. Researchers tested nine messages to identify key components or phrases that should be used within audio messages to provide visually impaired pedestrians with information regarding work zones that would affect their travel. The example messages provided here are based on that research, with some modifications and addition suggestions by Janet M. Barlow, Accessible Design for the Blind, jmbarlow@accessforblind.org.

Directions to negotiate an alternate route on sidewalk on the opposite side of the street

Should be provided from audible information device located within in the sidewalk area before the pedestrian reaches the corner where crossing the street is required

Message format:

"Attention [direction] [street name] pedestrians. Sidewalk closed ahead for [number] blocks. Alternate path on opposite side of road. Cross to the other side at next intersection and continue [number] blocks."

Sample message:

"Attention westbound University Drive pedestrians. Sidewalk closed ahead for 2 blocks. Alternate path on opposite side of road. Cross to the other side at next intersection and continue 2 blocks."

Directions to negotiate an alternate route in the roadway

Message format:

"Attention [direction] [street name] pedestrians. Sidewalk construction ahead. Temporary fenced path in street is open. Rejoins original sidewalk after [number] feet"

Sample message:

"Attention westbound University Drive pedestrians. Sidewalk construction ahead. Temporary fenced path in street is open. Rejoins original sidewalk after 100 feet"

IF path is ramped down to the street, additional information may be helpful:

Message format:

"Attention [direction] [street name] pedestrians. Sidewalk construction ahead. Ramp slopes down. Temporary fenced path in street is open. Rejoins original sidewalk after [number] feet"

Sample message:
"Attention westbound University Drive pedestrians. Sidewalk construction ahead. Ramp slopes down. Temporary fenced path in street is open. Rejoins original sidewalk after 100 feet."

Warning only of events (the pedestrian can continue on route)

Message format:
"Attention [direction] [street name] pedestrians. Construction ahead; sidewalk is open [event/caution] in area."

Sample messages:
"Attention eastbound University Drive pedestrians. Construction ahead; sidewalk is open.
Loud noises expected in area."

"Attention eastbound University Drive pedestrians. Construction ahead; sidewalk is open but uneven in area."

Additional recommendations:

The individual who records the messages should speak clearly, and messages should be recorded in a quiet area, not on the street in a construction area. Bentzen, Barlow, and Franck in *Determining Recommended Language for Speech Messages used by Accessible Pedestrian Signals: Final Report (2002)* recommend that: "messages must be recorded very carefully, in a clear, moderately pitched voice, with excellent diction and moderate pacing. For persons with unimpaired hearing, a female voice will be understood somewhat better than a male voice because the frequency spectrum of the male voice is closer to that of traffic. However, for the large number of people who are visually impaired who also have age-related or other hearing loss, a female voice may not be as easy to understand as a male voice."(page 23)

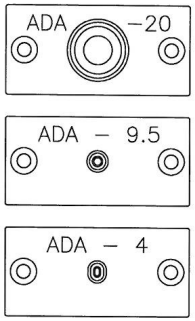
References

Bentzen, B.L., Barlow, J.M. & Franck, L. (2002) *Determining Recommended Language for Speech Messages used by Accessible Pedestrian Signals: Final Report.* Berlin, MA: Accessible Design for the Blind.

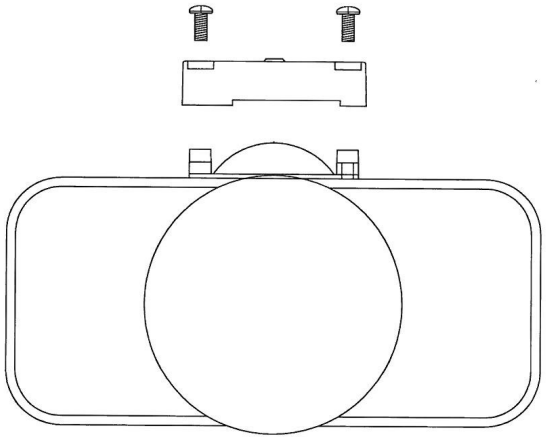
Ullman, B.R., Brewer, M. A., Fitzpatrick, K., & Ullman, G.L. (2008) *Investigating pedestrian components in temporary traffic control.* College Station, Texas: Texas Transportation Institute. FHWA/TX-08/0-5237-1

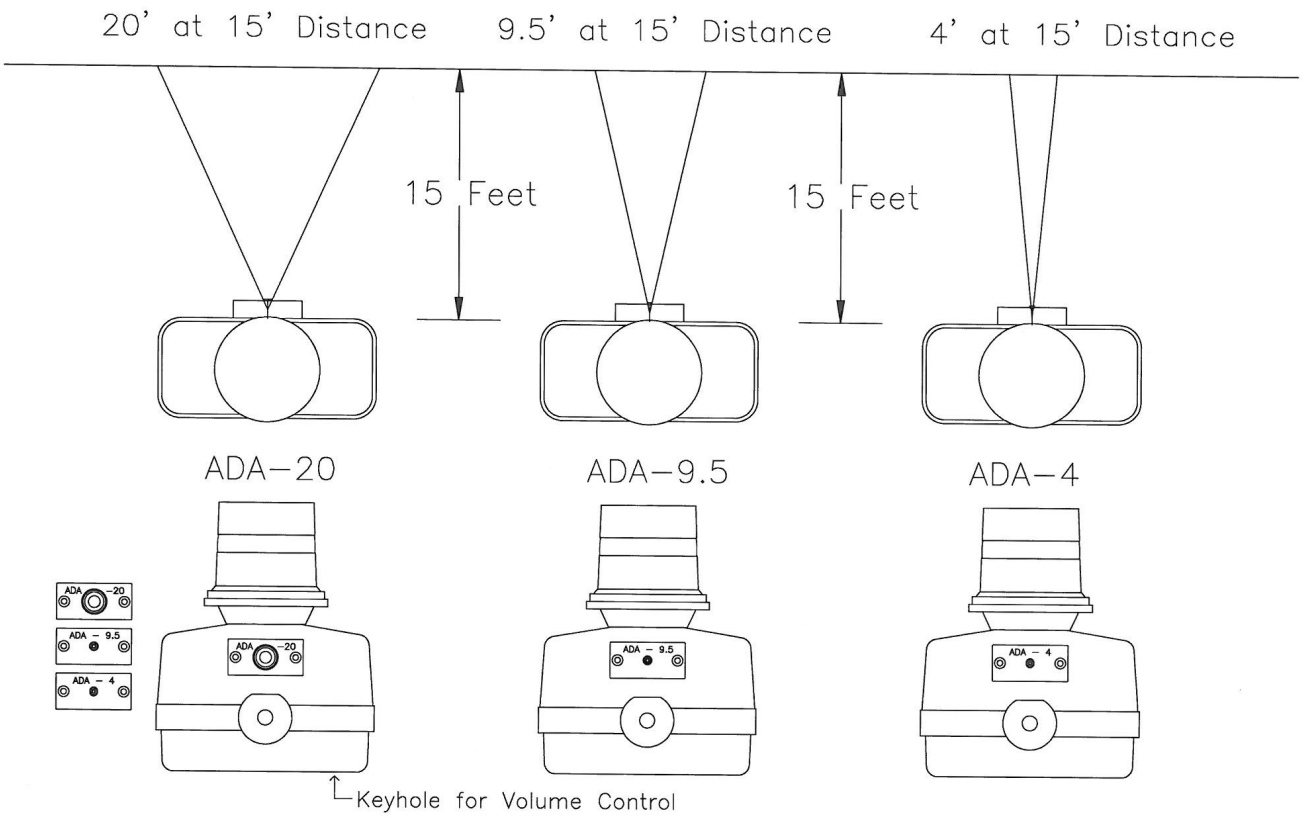
Motion Sensor Shields

See Diagram for Applications



Attach the Shield that best suites your needs





Select Motion Sensor Shield For Your Application